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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,559	03/23/2001	Tao Chen	000436	7119
23696	7590	04/05/2006	EXAMINER	
QUALCOMM, INC			LE, DANH C	
5775 MOREHOUSE DR.			ART UNIT	
SAN DIEGO, CA 92121			PAPER NUMBER	
			2617	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/816,559

Applicant(s)

CHEN ET AL

Examiner

DANH C. LE

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 103-123 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 116-120 is/are allowed.
- 6) ☒ Claim(s) 103-115 and 121-123 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 118-120 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 118-120 are dependent on cancelled claim 15.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**1. Claims 103-115, 121-123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Molnar (US 6,768,913) in view of Siira (US 6,023,607).**

As to claim 103, Molnar teaches a method of communication (figure 7 and its description), comprising:

forming a multiple beam pattern comprising one or more tracking beams and one or more search beams; and

maintaining a communication channel between a first station and a second station using the one or more tracking

Molnar fails to teach receiving a first signal from second station while for one or more additional signals using the one or more search beams. Siira teaches receiving a

first signal from second station while for one or more additional signals using the one or more search beams (figure 1-3 and theirs description). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Siira into the system of Molnar in order to enhance the performance searching in a radio communication system.

As to claim 104, the combination of Molnar and Siira teaches the method of claim 1 wherein searching for one or more additional signals comprises searching for multi-path components of the first signal (Molnar col.7, lines 52-60).

As to claim 105, the combination of Molnar and Siira teaches the method of claim 1 wherein searching for one or more additional signals comprises searching for multi-path components of the first signal.

As to claim 106, the combination of Molnar and Siira teaches the method of claim 1 wherein searching for one or more additional signals comprises sweeping the one or more search beams across a region to search for the one or more additional signals (figure 7).

As to claim 107, the combination of Molnar and Siira teaches the method of claim 1 wherein forming multiple beam patterns comprises forming omni-directional tracking beams (col.2, lines 28-49).

As to claim 108, the combination of Molnar and Siira teaches the method of claim 1 wherein at least one search beam becomes the tracking beam after receiving the first signal from the second station (Siira figure 3)

As to claim 109, the combination of Molnar and Siira teaches the method of claim 1 wherein the formation of the tracking beams comprises receiving energy through a plurality of spatially separated elements, applying a weight to the received energy from each of the elements, and combining the weighted energy (col.11, lines 40-col.12, line 37).

As to claim 110, the claim is an apparatus claim of claim 103; therefore, the claim is interpreted and rejected as set forth as claim 103.

As to claim 111, the claim is an apparatus claim of claim 104; therefore, the claim is interpreted and rejected as set forth as claim 104.

As to claim 112, the combination of Siira and Siira teaches an apparatus of claim 8 wherein the antenna is further configured to search for a second signal from a third station.

As to claim 113, the claim is an apparatus claim of claim 106; therefore, the claim is interpreted and rejected as set forth as claim 106.

As to claim 114, the claim is an apparatus claim of claim 107; therefore, the claim is interpreted and rejected as set forth as claim 107.

As to claim 115, the claim is an apparatus claim of claim 109; therefore, the claim is interpreted and rejected as set forth as claim 109.

As to claim 121, the claim is a remote station claim of claim 103; therefore, the claim is interpreted and rejected as set forth as claim 103..

As to claim 122, the claim is computer claim of claim 103; therefore, the claim is interpreted and rejected as set forth as claim 103..

As to claim 123, the claim is computer reception claim of claim 103; therefore, the claim is interpreted and rejected as set forth as claim 103.

***Allowable Subject Matter***

The following is a statement of reasons for the indication of allowable subject matter:

Claims 116, 117 are allowed.

As claim 116, the teaching of prior arts either alone or in combination fails to teach **further comprising** tracking the signal by adjusting the second weight applied to the received energy from each of the second plurality of elements, wherein the tracking of the signal comprises moving the searching beam to a plurality of locations by adjusting the second weight applied to the received energy from each of the second plurality of elements, and fixing the searching beam in the location having the highest energy level.

As claim 116, the teaching of prior arts either alone or in combination fails to teach **further comprising** a second filter configured to apply a second energy weight to energy received from each of the second group of elements, and combining the weighted second energy to form the second beam, the second weight applied to the energy received from each of the second group of elements being responsive to the searcher.

Dependent claims 118-120 are allowable for the same reason.

***Conclusion***

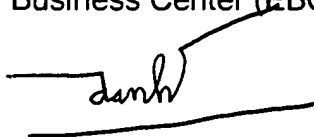
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Ward et al (US 6,167,286) teaches multi beam antenna system for cellular radio base station.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C. LE whose telephone number is 571-272-7868. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



April 2, 2006.  
DANH CONG LE  
PRIMARY EXAMINER